CT Docs
En 90
cb
vol 7
no 9

item 12B

Conn. Documents

CONN. COLLEGE LIBRARY
OCT 17 '80
NEW LONDON, CONN.

Citizens' Bulletin

Volume 7 Number 9 May 1980 $2/yr.
The Connecticut Department of Environmental Protection

Citizens' Bulletin

May 1980

Volume 7 Number 9 $2/yr.

Cover Photo: Arthur Rocque

Contents

3 Hartford's Park River: RIP
8 Forecast for Boaters
10 At Sea for Marine Education
12 Plan a Coastal Program
13 Report That Bobcat
14 Aquifers: Seismic Profiling
16 Wood Warblers
19 FYI: Waste Management Plan
20 Trailside Botanizing

Commissioner
Stanley J. Pac

Director Info & Ed
William Delaney

Editor
Margot Callahan

Graphics
Rosemary Gutbrod

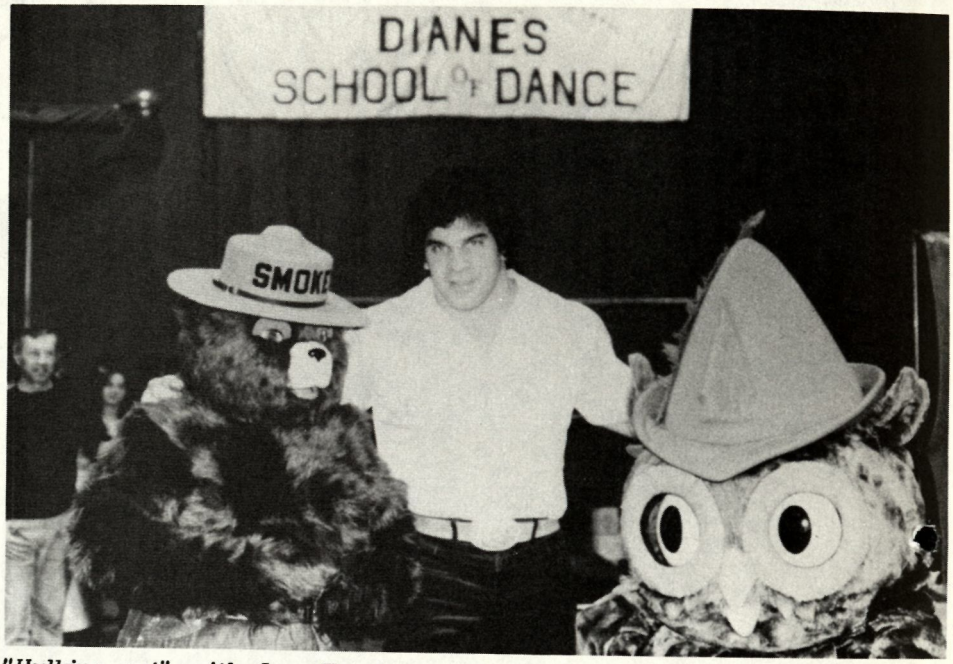
Composition
Linda Mrowka

Circulation
Helen Moriarty - 566-5524

DEP Citizens' Bulletin
(USPS 041-570)

Published eleven times a year by the Department of Environmental Protection. Yearly subscription $2.00. 2nd class postage paid at Hartford, Connecticut. Funds are also provided through a federal grant from the Office of Coastal Zone Management under the Coastal Zone Management Act of 1972. Please forward any address change immediately.

Ma terial may be reprinted without permission provided credit is given, unless otherwise noted. Address communications to Ed., DEP Citizens' Bulletin, Dept. of Environmental Protection, Rm. 112, State Office Bldg., Hartford, CT 06115.



Lois Kelley

"Hulking out" with Lou Ferrigno, television's Incredible Hulk, at Hartford's Sportsworld were Smokey Bear and Woodsy Owl. The DEP Forestry Unit's Robert Corbidge and Nancy Osterlund appeared as Smokey, the U.S. Forest Service's official forest fire prevention symbol, and Woodsy, who promotes efforts to fight pollution. Their parent organization, the USFS, celebrates its 75th anniversary this year.

Awards . . .

The Connecticut Association of Environmental Educators presented its first annual Environmental Educator of the Year Award to Steven Fish, director of DEP's environmental education program, at its February meeting at the Audubon Center in Greenwich.

Fish was cited for his work with a wide variety of nature and related organizations, his efforts in cooperation with various DEP units to expand and improve the Department's educational exhibits and nature interpretation programs, his improvement and expansion of DEP's environmental education resources, and his work on infusion of environmental education into the curricula of schools around the State.

At the same ceremony a special award was made to Wanda Rickerby, former director of Connecticut Audubon's Hartford Environmental Center, recognizing her outstanding contributions over the last few years to environmental education and public education on environmental issues. CAEE president Robert Macklin made the presentations.

The Connecticut Association of Environmental Educators was organized to advance nature education and environmental education by encouraging communication and cooperation among nature centers and museums, schools, and related organizations and to promote public interest in environmental education.

Finance . . .

The price of the DEP Citizen's Bulletin has not been increased since it was first put on a subscription basis back in November 1975 -- though the Bulletin has increased 25 percent in size and our costs (printing, postage, art supplies, photo processing, etc.) keep rising.

We are, therefore, raising the subscription price, as of July 1, 1980, to $3 per year (or $5 for a two-year subscription).

"The Connecticut Department of Environmental Protection is an equal opportunity agency that provides services, facilities and employment opportunities without regard to race, color, religion, age, sex, physical handicap, national origin, ancestry, marital status or political beliefs."

Burying the Park River

How one waterway's pleasure boats and skaters gave way to a series of conduits

By Allan N. Williams, Senior Environmental Analyst, DEP Natural Resources Center

Mark Twain wrote thirteen of his famous novels, including The Adventures of Tom Sawyer and Adventures of Huckleberry Finn, while living on a bluff adjacent to "a pretty stream that wound through the willows and among the trees." That "pretty stream" was Hartford's Park River. This year, with the completion of the Park River Local Protection Project, however, the main stem of the Park River will technically become a sewer, its entire length enclosed in a series of pressure conduits. How was this once pretty stream transformed into a series of lifeless conduits? The story should provoke some thought.

Since 1940 continued urbanization, with accompanying flood plain development, has resulted in a series of flood control projects, at a cost to the public of over $120,000,000. One detrimental side effect has been the step-by-step destruction of the Park River as a biologically stable habitat and as an aesthetically and recreationally viable part of Hartford's cityscape. The present state of the Park River was arrived at because piecemeal local solutions have been applied to problems whose origins are basinwide and which go beyond municipal boundaries. While some basin planning has been done and some flood control works emplaced, these have been too little and too late to save the main stem of the Park River.

Basin Characteristics

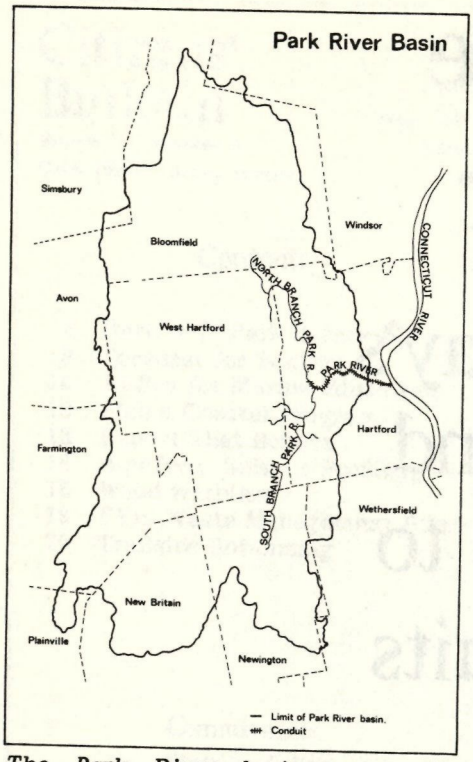
To understand what has happened, you must first look at the physical characteristics of this river system. The Park River basin is subdivided into three units. The main stem Park River, in the City of Hartford, is fed by two major tributaries, the North Branch Park River and the South Branch Park River. The overall basin, including all three rivers, covers approximately seventy-nine square miles and incorporates segments of eleven communities, with the greatest part in Bloomfield, Farmington, Hartford, New Britain, Newington and West Hartford.

The steepness of the Park River basin's western slopes, coupled with the highly urbanized and suburbanized nature of the greater Hartford area, causes most water courses within the basin to have rapid peak flows. As a consequence, the Park River usually crests within twelve hours of the period of heaviest rainfall. Translated, this means flooding in the Park River is a serious problem.

The upper reaches of the North Branch flow through areas that are basically farmland, forest, and open space. There is also a short stretch of wooded or landscaped flood plain along the North Branch in Hartford. This small stretch of landscaped banks is a reminder of the days when one could walk in a park-like environment for the entire length of the river. The remainder of the basin is densely populated and developed.

The Problem of Flooding

Flooding and flood damage are separate and distinct phenomena. Many water courses are regularly flooded but cause little harm as their waters overbank into natural flood plains. Problems arise when structures and people occupy these lands. Development in a flood plain may generate two types of problems. First, the development may itself be subject to inundation; and second, occupation of flood storage or conveyance properties may exacerbate upstream and/or downstream flood-



The Park River basin covers 79 square miles and incorporates segments of 11 communities, but only after the two worst floods on record, in 1955, was flood management recognized as a basin-wide problem.

ing. A consequence of changing the water course channel (floodway) and of filling in the flood plain may be that homes and businesses not previously flooded become subject to damage.

Flooding from the Park River is a natural phenomenon. The problem originated when Hartford was founded on the Connecticut and Park River flood plains in the 1630s. Since then a number of dikes, dams, and other changes in the Park River have encouraged additional flood plain development. As a consequence, damage potential increased more rapidly than flood control.

As development intensified in the Hartford area, tenements were built to the river's edge, land was filled for industrial and commercial purposes, and the Park River became a receptacle for various wastes.

In the middle nineteenth century, Samuel Colt systematically constructed dikes along the Connecticut and Park Rivers to protect his munitions factory and his personal estate. Prior to 1850 "this Little River provided water power for a variety of mills, factories, tanneries, and a soap works." Later industries included some of the nation's first bicycle and typewriter factories. (The "Little River" is among the many titles that have been applied to the Park River over the years. Other names included the Mill, Riverett, Little Woods, Ox Pasture, Hog, and Meandering Swine. An article in the Hartford Courant on August 7, 1913, stated "there seems to be no remedy for the disagreeable conditions at the present time, a good rain being practically the only thing that will remove the offensive odor and carry off the (grass) and putrified matter that has accumulated on the banks of the river." It was no wonder that such a river could be called The Meandering Swine.)

Since Mark Twain lived in Hartford — from 1868 to 1891 — the population of the major basin communities has increased from 117,000 to 368,000, an increase of over 200 percent. The population of upstream communities increased 91 percent from 1940 to 1970, and the density of development nearly doubled.

As development progressed and water quality of the river decreased, flood related damages also increased. According to an engineering study completed in 1958, several years after the biggest flood in history, "Records are available from 1911 and indicate that the Park River basin has experienced flood damage at least forty-eight times since then . . . The greatest flood of record . . occurred on August 19, 1955, and was followed two months later by the second greatest flood of record." Flooding is not limited to one season or to one cause. For example, heavy rains and melting snow caused the floods of March 1936 and January 1938, but hurricanes have caused severe damage in August, September, and October. In addition, thunderstorms have caused flash flooding in smaller streams at almost every time of the year.

Efforts to Control Floods

Response to these floods precipitated a series of approaches to the flood problem. As a consequence, one can tour the Park River basin and find nearly every form of flood protection. Since 1940, a dozen major flood control programs have resulted in the construction of about twenty separate flood control projects. There are dikes, dams, trapezoidal channels, and culverts; dredged, widened, deepened, and riprapped channels; and diversions. On the non-structural side, natural valley storage protection, flood plain zoning, regional flood control commissions, flood insurance availability, wetlands regulation, and flood warning and forecasting capabilities have also been developed and employed.

Early attempts, such as Colt's, to control the river aimed at protecting individual sites immediately adjacent to the river. As a result, damage to the River's ecosystem was often localized and apparently minor, as in 1920 when the confluence of the Park and Connecticut Rivers was moved about three hundred feet upstream to provide growing room for the electric light company. Flooding was not seen as a serious problem during that period. For example, spring flooding in 1918 only warranted a story on page ten of the Hartford Courant. At that time, the concern was for the undermining of trees in Bushnell Park, the oldest municipally purchased park in the nation. There appeared to be little concern for public safety or property damage.

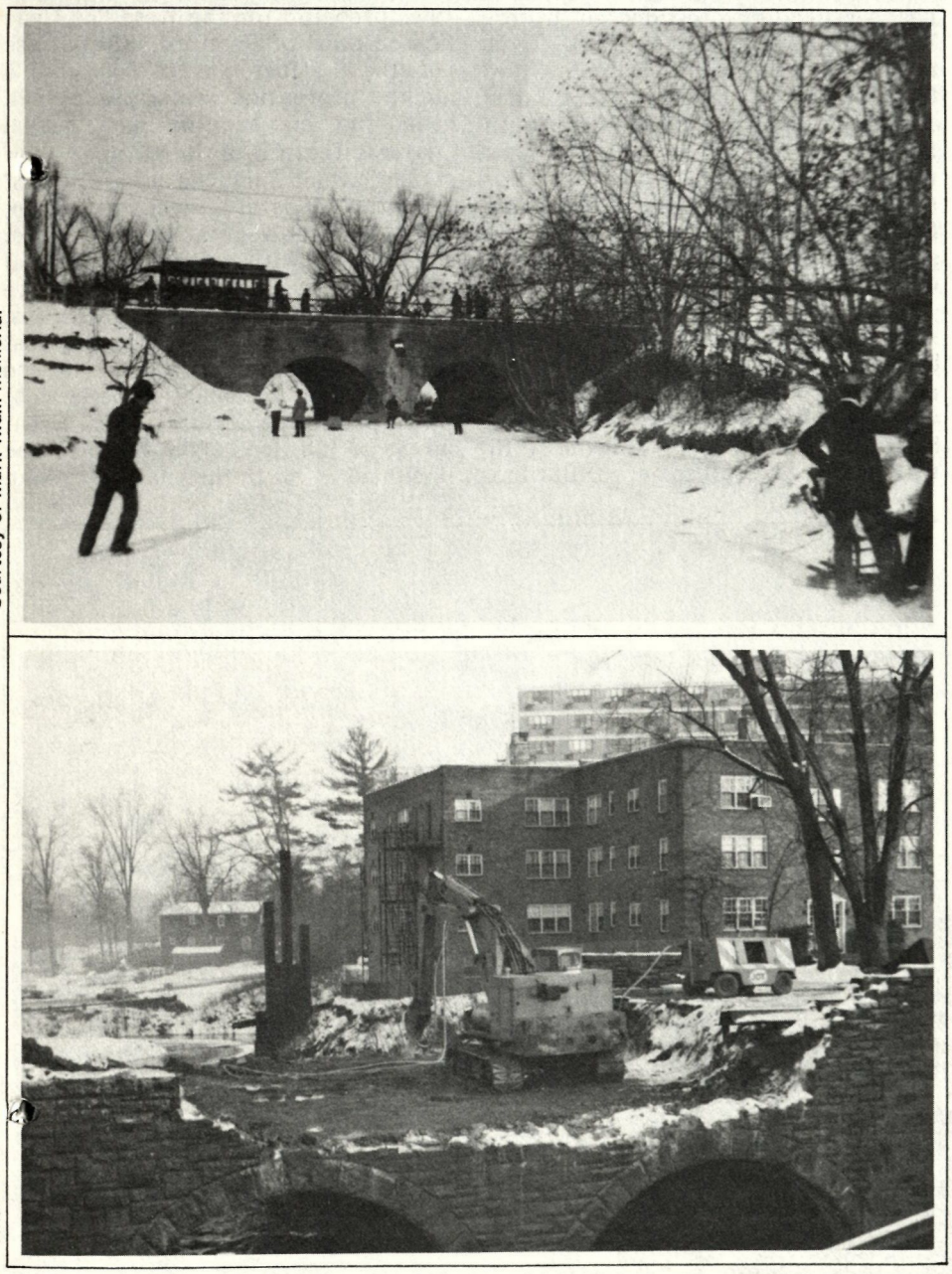
Oddly enough, attempts to protect Bushnell Park may have resulted in the first major physical changes to the Park River. A dam was built in 1919 whose designers described it as "a large pool of water assuring a steady stream and more than the shallow depth which made the Park River obnoxious near Bushnell Park in the summer months." By 1920, stone walls had been constructed along the River's length within the Park to protect against erosion and to narrow the channel and concentrate flow.

Severe flooding in 1938, accompanied by large flood losses, turned the thoughts of Hartford area residents from trying to protect the park to trying to protect businesses, homes, and citizens from flooding. Initial solutions were to put several tributaries in underground box culverts. Several such projects were completed between 1940 and 1954. "By the time these first major flood control projects are built, the river and its environs are so aesthetically irritating that many welcomed the project," stated the Hartford Times on New Year's Day in 1942, "yet granting that this murky, stagnant, odoriferous stream whose normal

aspect was anything but torrentious, had long since lost its natural charms, are there not old residents to whom its passing will bring memories of a delightful little river . . ."

In 1955, the two largest floods on record occurred, and once more demand was created for additional flood control. However, as before, the demand was for individual protective structures, and little heed was given to trying to prevent increases in flooding because of filling of flood plains and increased urbanization or to restricting the flows from the headwater regions of the basin.

Up until this time, Hartford had solved its problems by building structures in Hartford. However, it became apparent to those in Hartford that they could not solve their flood management problems unless the problem was approached on a basin-wide basis. As a consequence, the State Legislature authorized the Park River Flood Control Commission in 1955. Unfortunately it had taken the two greatest floods of record to facilitate the effort.



Courtesy of Mark Twain Memorial

Allan N. Williams

"Father also taught us to skate on the little river that flowed through the meadow behind the house, and often we glided back and forth on the white ice until the sun had set and the trees looked like giant specters," wrote Clara Clemens in My Father, Mark Twain. Photo, circa 1880, shows skaters on the Park River at Farmington Avenue, about 500 feet west of the Mark Twain house. Construction scene shows same bridge being removed for replacement by the northernmost stretch of Park River conduit.

The flood commission, which is still in existence, is composed of representatives from Hartford, West Hartford, and Newington. The Commission, in conjunction with the U.S. Soil Conservation Service, the U.S. Army Corps of Engineers, and the Connecticut Department of Agriculture and Natural Resources (now the Department of Environmental Protection), developed plans for ten major flood control projects. These projects include the present pressure conduit work (the "conduits" are actually two poured-in-place square pipes) along the Park River proper, channelization of upstream tributaries, and construction of four flood control dams in headwater areas. (Before you envision three-hundred-foot concrete dams with multi-acre lakes behind them, you should note that these are special, relatively innocuous structures that alter the natural situation relatively little by construction of a low dam that's more like a small dike. Such a "dry dam" provides a guaranteed open space in areas which are rapidly urbanizing. Not only does the dam protect this open space from development, but it provides a jogging and cross country ski path as well. Artifically created shallow ponds, constructed in the backwater areas of these dams, encourage the development of a shallow marsh and shrub swamp life that improves the wildlife value of the site by increasing habitat diversity.)

Who pays the pipe(r)?

The various federal, state, and local flood control structures have not come cheap. The federal government has invested approximately $87 million and the state and local governments about $33 million. The present Park River local protection project is expected to cost between $70 and $77 million. Connecticut stream encroachment line delineations for the Park River cost another approximately $75,000. Of course all of these cost figures are not for recent dollars. If all the projects were to be constructed today, the total expenditures would be around $151 million.

Costs that won't go away

Unfortunately, the completion of numerous flood control protective works does not preclude additional expenditures. Maintenance and repair of flood control projects is fast becoming a problem among federal, state and local agencies. An improperly maintained project can be as dangerous as no project, for a certain security comes to be expected by adjoining businesses and residents. Because the federal government has been willing to spend large amounts of capital for structural projects, both the state and municipalities have depended on structural solutions. Towns and cities have been bailed out for past inefficiencies in exercising control over flood plains. However, as maintenance costs rise and government's ability to pay for services decreases, the maintenance costs are becoming a burden on the towns and the state. Most of these costs, other than major repairs, are not recognized by the public. I questioned several towns and the state to determine their OM&R costs, but few could come up with an exact figure. The city of Hartford estimates an annual expenditure for all its flood structures at over $100,000 per year. While that figure includes costs for protective works outside the Park River basin, it does serve to illustrate the cost of maintaining flood projects.

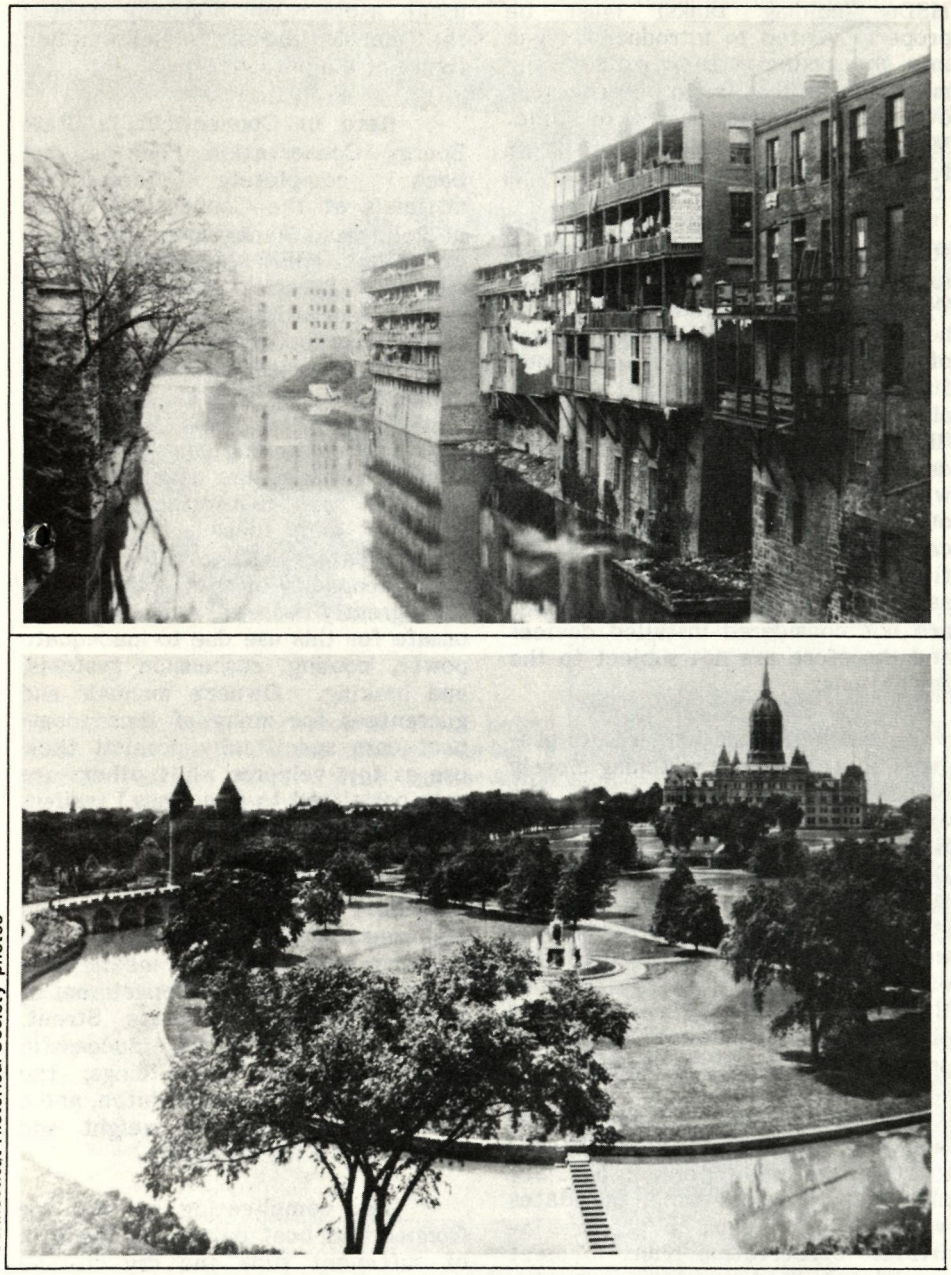
In addition to structural protective measures, other forms of flood plain management have been implemented. The State of Connecticut has surveyed and conducted hydrologic analysis along the Park River and its tributaries and has delineated Stream Channel Encroachment Lines along the North Branch and South Branch of the River. Regulations require a permit from the state for any activity within these lines. This form of flood plain management has significantly reduced flood plain development.

The municipalities within the basin also employ certain protective measures. Of the six communities comprising most of the basin, five have flood plain zoning, and the sixth will need to adopt some regulations pursuant to the National Flood Insurance Program. Five of the six towns have identified areas needing specific flood protection and all five of these have initiated corrective actions. All six communities own property or easements on property for some flood plain lands in their towns.

Private organizations have also attempted to protect the remaining open space along the upper branches. A special architectural master plan was prepared for the West End Civic Association of Hartford. The purpose of the effort was to "compose a linked recreation system which will open up an exciting and unusual natural feature of Hartford." Their study, which included an analysis of zoning, land use, land ownership, physiography, vegetation and wildlife, delineates, with mapping and verbal description, those areas which are most suitable for access, aesthetics, and recreation. Its "Site Conclusions" recommend that the "entire river and an easement on one side be brought into public ownership. Significant areas of the flood plain should also be included . . ." Unfortunately, despite

Connecticut Historical Society

This flood, following a 1936 hurricane, was only one of at least 48 floods on the Park River recorded between 1911 and 1958. Scene is Bushnell Park looking east toward downtown Hartford with the Soldiers and Sailors Arch at the right.



Connecticut Historical Society photos

Over the years, and particularly over the last century, land along the Park River was filled for industrial and commercial purposes. Tenements like those above (circa 1910), east of Hartford's Main Street (where there is now an entrance to Interstate 91), were built to the river's edge. Its waters became the receptacle for a variety of wastes and bit by bit its attractiveness declined. Stone walls, lower photo, were built in 1920 to narrow the Park River's channel and concentrate its flow through Bushnell Park and thus to eliminate stagnant conditions that made the area obnoxious during the summer. This project may have been the beginning of the river's ultimate "burial."

neighborhood efforts, the city has not taken any action on this study.

With the completion of the structural work in Hartford and some upstream channel work in the South Branch, the Park River basin will be free of serious flood hazards (providing, of course, that none of the works fail at the time of a flood). With the completion of the existing projects, Hartford will also be devoid of any free flowing watercourse, save for a small section of the North Branch and the unreachable Connecticut River. While the eradication of water life comes as no surprise, was it unavoidable? Is it unavoidable for other cities? The events which engulfed the Park River proper continued through the 1970s, but, as noted, the historic precedents for the destruction go back well over a hundred years. Some communities have had the foresight to enact less environmentally damaging alternatives such as flood plain zoning, purchase of flood plain property, and construction of dry dams. But most communities have also succumbed to environmentally damaging forms of flood protection such as conduits, concrete channels, and riprapping projects.

When the first sections of the Park River were buried in conduits in 1942, the Hartford Times declared, "If Hartford's ancient river had become an irremediable eyesore whose fault was it. Had not this despised and dishevelled old hag of a stream nourished in years gone by the very civilization which first betrayed and then snared it."

Never was there any one development, any one factory, any single road crossing about which you could say, "This destroyed our river." At no point was it obvious to the citizens of Hartford what they were losing, for the venerable memories of the positive values of the river have long been forgotten.

As an urban dweller looks out at the construction activity that will complete the river's burial in 1980, he or she probably has no idea that pleasure boats once frequented this river or that racing was a favorite sport of local oarsmen. There is no sign of speedskaters, figure skaters, or swimmers. No perch, bullhead or sunfish are taken from its passages and consumed.

In the many years that the Park River has been doomed have we made progress in protecting our streams? Unquestionably, we are more knowledgeable about how various projects affect watercourses. We have passed many statutes to protect wetlands, watercourses, and flood plains. But what is still needed is a method of inventorying our water resources which provides for monitoring changes over many years.

If there is a lesson to be learned, it is that the biggest danger to most of our rivers, especially our urban and suburban waters, will not come from any single development at any single time, but rather will come from the cumulative development, over many years, that, unchecked, can lead from a pretty stream to a conduit. ■

New laws, energy crunch will affect Connecticut boaters

By Frank Glista, DEP Boating Safety Coordinator

As boat launching time approaches, Connecticut boatmen and boating enthusiasts need to be aware of several factors affecting their recreational choice.

As of January 1, 1980, federal law requires that every craft equipped with an installed marine toilet must be in compliance with regulation 33CFR159. Direct discharge units are illegal after this date. Anyone contemplating installation of a marine sanitation device should ascertain that the unit is U.S. Coast Guard certified and properly labeled.

Three types of units have been certified by the Coast Guard as legal for use on vessels under 65 feet. They are:

Type I — flow-through, effluent USCG certified to 1,000 fecal coliform/100ml, no visible floating solids standard;

Type II — flow-through, effluent USCG certified to 200 fecal coliform/100ml, 150mg/L total suspended solids standard;

Type III — USCG certified to no discharge standard (holding tank).

Type I and Type II marine sanitation devices mascerate the sewage prior to chemical treatment and discharge and disinfect it with chlorine, either in the form of bleach or salt tablets. Some Type II certified MSDs utilize aerobic digestion for treatment prior to discharge. Type III MSDs (holding tanks) must be properly vented to introduce oxygen into the system and to exhaust any methane gas that could be generated over an extended period of time. Manufacturer-recommended disinfectants must be used.

It is estimated that the installed cost of a Type I device will range between $750 and $900, and a Type II would cost considerably more, between $1,000 and $1,200. Owners of small cruisers and day-sailers may find that the cheapest option available to them is to remove their illegal heads and substitute portable devices. These units, very popular with campers, are available at a cost of $80 to $150, depending upon capacity which varies from 20 to 40 flushes. The unit is then carried ashore and emptied. Portable toilets are not considered installed devices and therefore are not subject to the regulations.

Another situation whose progress boaters will be watching closely is developments related to the Federal Emergency Energy Conservation Plan. On January 30 Charles W. Duncan, Jr., Secretary of the U.S. Department of Energy, publicly stated that recreation and tourism would not be singled out in the event of an energy shortfall. In spite of this assurance, the federal stand-by plan announced in March includes a proposal to ban weekend boating.

Simply stated, the stand-by plan would go into effect if an energy short-fall of eight percent becomes imminent. At such time, the states would have 45 days to prepare individual conservation plans to meet specific federal energy cutbacks. The boating industry and boatmen fear that many states would simply adopt the federal plan or model their plans on it and would incorporate the provision banning weekend boating.

Meantime, Department of Energy's plan exempts recreational vehicles, snowmobiles, and light personal aircraft since, in its words, "including these vehicles would greatly increase the difficulty and cost of implementing and enforcing the restrictions, and would yield insignificant fuel demand reduction beyond what would be achieved by applying the restrictions to watercraft alone." The DOE claims that pleasure boating accounts for two to three percent of America's fuel usage, a claim which grossly exceeds the marine industry's consumption figure of 0.5 percent.

Here in Connecticut, a State Energy Conservation Plan has not been completely formulated. Officials at the Connecticut Office of Policy and Management feel, however, that DOE's plan is too drastic, and they favor a plan that would reduce recreational consumption by an amount proportionate to the shortfall. Connecticut's boatmen should be heartened by this.

Our continuing energy problems have encouraged the development of compact and sub-compact automobiles, and these may present trailer-boaters with problems. The pulling capacity of these vehicles has been greatly reduced, rendering them unsafe for this use due to inadequate power, cooling, suspension systems, and braking. Owner's manuals and guarantees for many of these compact cars specifically prohibit their use as tow vehicles while others are only permitted to tow class I trailers (gross weight of trailer and load not to exceed 2,000 lbs.). All vehicles using the highways must conform to the State's legal requirements, and trailered boats are no exception. To be certain that your rig meets legal minimums, consult the Department of Motor Vehicles, 60 State Street, Wethersfield, CT 06109. Successful trailering requires three things: the proper trailer, the proper hitch, and a tow vehicle with the weight and power to pull the rig safely.

Also complicating matters for Connecticut boat owners, is the lack of sufficient slips and dry storage facilities at marinas in the State. Marina owners contemplating expansions of facilities or the development of new boating installations are confronted today with prohibitive costs.

Despite these concerns, boat owners and boating enthusiasts look forward to an active boating year in 1980 and a busy decade ahead. Boat owners are adjusting to new boating "facts of life," and attendance at boat shows across the nation confirms the public's continuing dedication to boating as a recreational choice. It has been estimated that over 50 percent of boating is in conjunction with fishing. Boating and fishing are an unbeatable recreational combination, and one which at least may help cut down the cost of groceries. ■

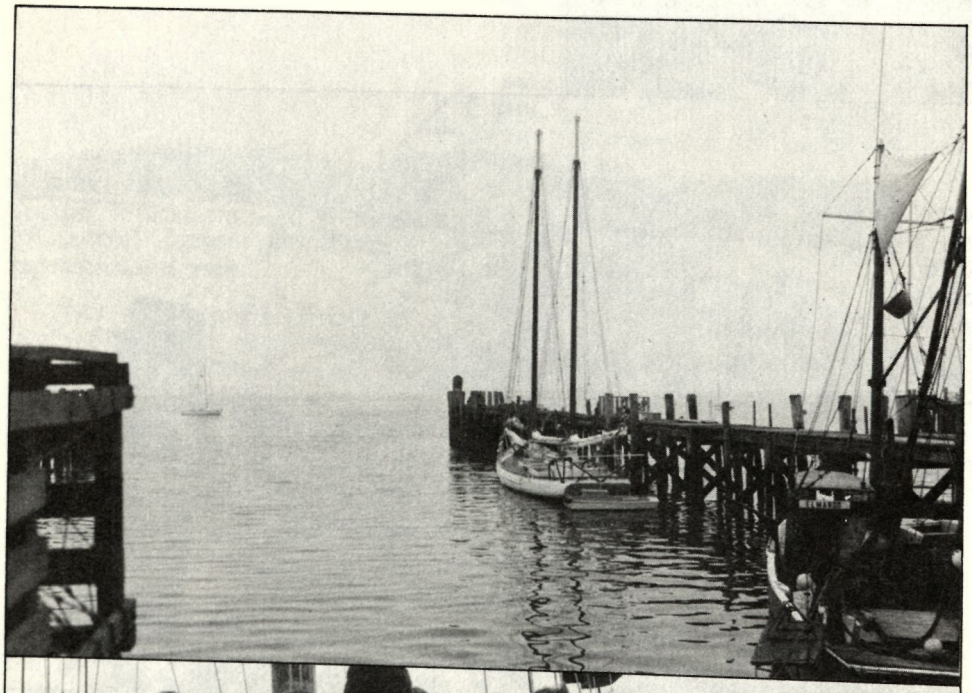
Fred Pogmore, Chief of DEP's Law Enforcement Unit, left, and Randolph Dill, center, DEP's coordinator of boating enforcement and special services, tie up the "Finfish." On the bridge is Conservation Sergeant John Overturf, law enforcement supervisor in DEP's marine district and skipper of the "Finfish."

Dill and Pogmore, foreground, check patrol plans with Coast Guard officers during a regatta patrol. The State's conservation officers enforce boating laws and safety regulations governing boats under 65 feet in length on all waters within Connecticut's borders. They cooperate with the U.S. Coast Guard in patrolling federal waters within the State as well as cooperating with local communities in their boating enforcement efforts.

The "Finfish," a 28-foot Bertram, is the DEP's largest patrol boat and "flagship." It is used to patrol in the marine district along with a second, 25-foot Bertram, three Makos, and several smaller vessels. DEP's inland fleet includes 35 patrol boats, most of them in the 16-foot class. During fiscal 1979 arrests for boating violations numbered 675.

'Schooner' offers marine education on location . . .

By Randy Sheinberg, Massachusetts Audubon Intern



Randy Sheinberg photos

The people on this boat are learning, on location, about sailing, conservation, and marine science. Schooner, Inc., operates the educational boat, the 66 foot frame bugeye, the J.N. Carter, out of New Haven Harbor. Their rationale is that the best way to educate someone about the marine environment is by offering an opportunity for experience and observation.

"You are the crew here today," Joe Rozak, Schooner's educational director, tells groups out for a day's trip. Aside from Rozak and the skipper and one other staff person, they are. Their first less on is knot-tying. Its application: hoisting the sails.

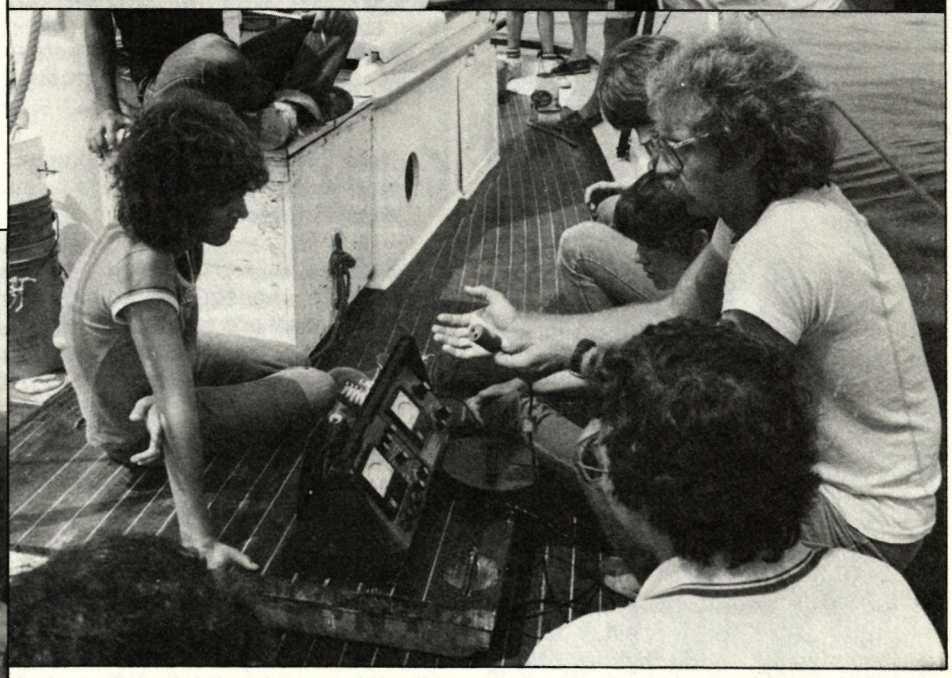
Once the boat is sailing on its course, it's time for observation. Using magnifying glasses and microscopes, the students observe plankton from the water. They test the water for salinity, pH, dissolved oxygen, and temperature. Some of the group assist with navigation by plotting location, weather, and tides. Later a net is thrown overboard to bring up fish, crabs, and sometimes a lobster.

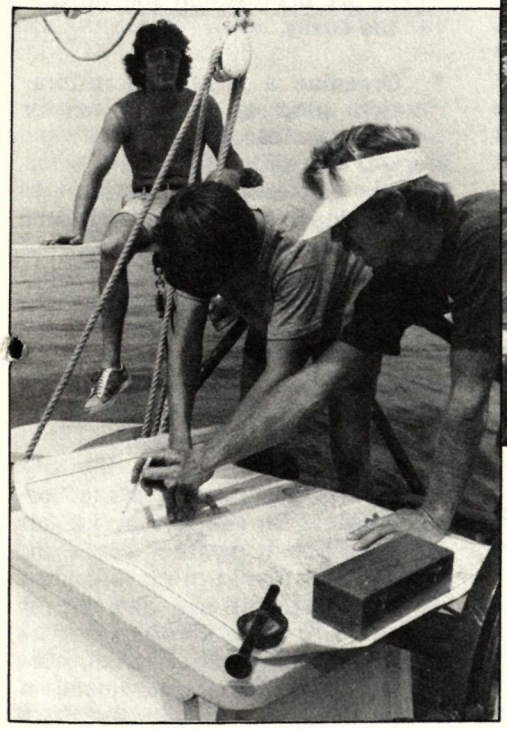
Souvenirs of the trip may include a few starfish and should include a lot of knowledge about the marine environment.

Schooner's whole- and half-day trips are designed for school, college, or civic groups of up to 20 persons. If you are interested in one of these hands-on introductions to Long Island Sound's ecosystem, you can contact Schooner at 60 S. Water St., New Haven, CT 06519 (203-865-1737). ■

At left, above, the J.N. Carter at its dock. Below, an eager crew takes in the fenders as the cruise begins.

At left, above, a brave crew member climbs out on the bowsprit to untie the jib halyard. Below left, Skipper Alan Burnett teaches students how to plot the ship's position and other navigational skills. Directly below, educational director Joe Rozak looks at ctenophores and other plankton with the group. Bottom photo, older students use a salinometer to test salinity of the water.





coastal area management
71 capitol avenue hartford conn 06115

CAM NEWS

"Year of the Coast" Activities

As we approach the warmer weather and thoughts turn to recreation, it would be good to keep "Year of the Coast" activities in mind. Many Connecticut groups have already indicated that they plan major and minor events celebrating the "Year of the Coast" theme. In order to help publicize the many interesting events the CAM Program will publish a special edition of Land's End devoted solely to a listing of special events and their sponsors. Therefore, we encourage you to send information on events which you are sponsoring for "Year of the Coast" as soon as possible. Send to Editor, Land's End, Coastal Management Program, 71 Capitol Ave., Hartford, CT 06115, or call 566-7404. (After publication of the special edition you may still send events to be included, if timely, in regular editions of Land's End.)

The following is a list of ideas for events which your group may find helpful:

* Establish and promote science fair awards for coastal resource projects.

* Review implementation of local, State, and federal laws aimed at controlling shoreline development, protecting or improving water quality, protecting wetlands and dunes, etc.

* Arrange with local newspapers to feature local coastal facts and events on a regular basis during 1980.

* Sponsor harbor festivals in coastal cities emphasizing such themes as waterfront revitalization and historic appreciation and preservation.

* Develop special museum shows dealing with subjects like ecology, arts, crafts, and the history and economic value of the coast.

* Invite a speaker to address an organization to which you belong on a coastal topic, or offer to provide a speaker to civic organizations, neighborhood groups, schools, etc.

* Set up tours of wetlands, tidepools, beaches, islands, and other coastal areas aimed at increasing awareness of ecological processes and coastal geology.

* Donate property or easements to coastal land trust programs, or form such a trust.

* Hold curriculum development workshops for teachers on coastal topics.

* Sponsor a walking tour of a historic coastal building or town, seashore resort, or fishing village.

* Survey an area of the coast to identify sources of pollution, development in high hazard zones, and other examples of unwise use of coastal resources.

* Ask local radio stations to designate coast appreciation days with public service announcements, interviews, and debates on coastal issues and musical programming on coastal themes.

* Invite your congresspersons and candidates for public office to speak on coastal issues during 1980. Urge them to support coastal legislation and the coastal zone management program in their state.

* Develop special library activities, exhibits, slide shows, movies, and book lists on coastal topics.

* Organize a film festival with movies on coastal ecology, history, etc.

* Develop and distribute coastal awareness materials (descriptive brochures on local sites, history, economic factors) to hotels, gas stations, visitor centers, and restaurants in coastal areas.

* Print up a self-guided auto, bus, and/or bike tour of areas of the coast featuring views of significant natural or economic value, examples of coastal geology in operation, and examples of poorly planned or unwise development.

* Conduct conferences, workshops, and debates on specific local coastal issues and the coastal planning process.

* Urge the schools and your children to attend or run "Year of the Coast" programs and schedule PTA meetings about coastal concerns. Encourage schools to incorporate coastal education. Help organize essay or art contests on the value of the coast.

* Organize a marshland restoration project or a beach or estuary clean-up.

* Ask television stations to develop programs on topics such as the economic benefits of coastal resources and the costs of unwise coastal development to property and human life.

* Conduct a local coastal land audit and publicize a list of the most threatened areas.

* Check local and state ordinances to see if they include measures to protect dunes and wetlands, control development in floodplains and geologically unstable areas, protect habitat for wildlife and fisheries, etc., and work for improvements if needed. ■

REPORT OF BOBCAT SIGHTING

Date observation was made

Type of observation (√): Actual sighting___. Tracks in snow___. Sounds___.

Other comments

_____

_____

Name of person who observed the bobcat or sign of:

Address

*Town*_____ *Zip*_____ *Phone #*_____

Town in which bobcat was observed or sign found

Exact location from State road map, if possible.

_____

(For example: ½ mile north of Rt. 66, ½ mile west of Rt. 2)

Date form completed

Reports Yield Valuable Bobcat Data

By Joseph Risigo,
DEP Wildlife Biologist

Often people ask me, "Are there really bobcats in Connecticut?" The answer to this question is yes. Each year the DEP Wildlife Unit receives several reports of this animal. Some reports are of actual sightings, while others report the discovery of tracks. The elusive and shy nature of the bobcat provides little opportunity for most people to actually observe one in the wild.

Bobcats are difficult to describe because of marked variations among individuals. In his publication Wild Mammals of New England, Alfred Godin describes the bobcat as follows:

The pelage is dense, short, and very soft when in prime condition. The sexes are colored alike and there is marked seasonal color variation. The coloration varies considerably among individuals. In summer the upperparts are grayish, buffy, or reddish, spotted or streaked with black, darkest and most intense along the back from the head to base of the tail and becoming lighter on the sides. The rump and hind legs are buffy. The underparts and the insides of the legs are whitish with black spots, and there are black bars on the front legs. The head is streaked with black, and the buffy neck is heavily streaked or spotted blackish. The backs of the ears are black with a large gray or white patch, and the tufts are black when present. The eyelids are white. The tail above is colored like the back and has three or four indistinct black bars, the last being broadest and blackish at the tip, and the tail below is whitish to the tip. The winter pelage is much paler.

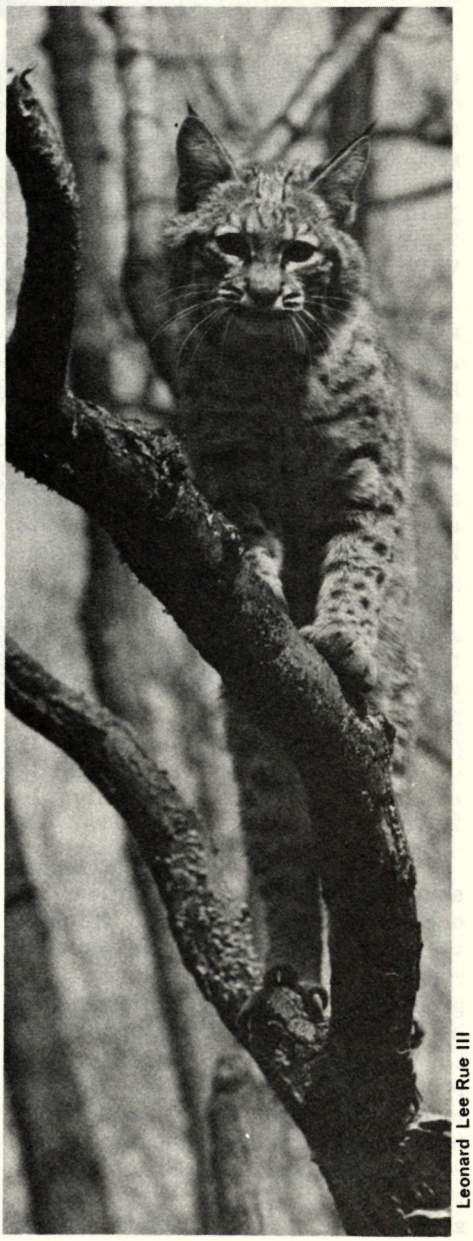
The weights of adult bobcats vary from 15 pounds to 35 pounds with unusual occurrences of 45 pounds or more. Males are generally larger than females.

As predators, bobcats feed on a variety of animals, from mice to deer. They prefer areas with rough topography, combined with diversities of coniferous and deciduous cover types. A rural, forested rock ledge range, in close proximity to a swamp and open fields, provides both denning sites and hunting territory. This type of habitat is preferred by bobcats in Connecticut.

Studies have shown these animals to be adaptable to a wide range of habitats; however, heavily populated suburban areas, cities, and extensive agricultural areas have problems supporting bobcats. Since the early 1900s agricultural lands have rapidly diminished in Connecticut, and this reversion of open farm lands to forests has increased the potential habitat for the species.

Some species of furbearers, such as muskrats, can produce large populations in a single year because of the abundance of suitable foods and their high reproductive rates.

To page 18



Leonard Lee Rue III

208 water quality management

Groundwater with a Bang

The Connecticut 208 Program has been working since 1977 to protect the State's major groundwater supplies. As an integral part of these efforts, the United States Geological Survey has mapped the major, stratified-drift aquifers that exist throughout Connecticut.

Simply put, a major stratified-drift aquifer is an underground layer of sand and gravel which is at least ten feet thick and saturated with groundwater. Such an aquifer is capable of yielding 50 to 10,000 gallons of water per minute, which makes it suitable for use as a public water supply.

In Connecticut, groundwater is expected to play a major role in future public water supply development for two reasons. First, virtually all available surface water suitable for drinking has already been developed as water supply; very little additional surface supply potential exists. Second, the Federal Safe Drinking Water Act has recently imposed very strict standards on drinking water quality. Many existing surface water supplies will not meet these standards unless expensive water filtration facilities are constructed. Therefore, many communities are examining the feasibility of developing groundwater capacity as a less expensive alternative to filtration.

In order to protect our major aquifers from contamination it becomes essential that land use over the aquifers and their associated recharge zones be regulated. A groundwater protection ordinance has been developed by the Connecticut 208 Program which allows for the protection of groundwater through local planning and zoning regulations. In most cases, simply changing zoning regulations to exclude certain activities is sufficient. But this is not as simple as it appears. Before a town will make an effort to change zoning, it must be sure that the aquifer is capable of yielding significant amounts of water and must know the extent of its boundaries and the level of saturation. Many of the aquifers identified by USGS were inferred from surficial geologic maps. In such instances, it is not certain whether or not a potential public water supply exists.

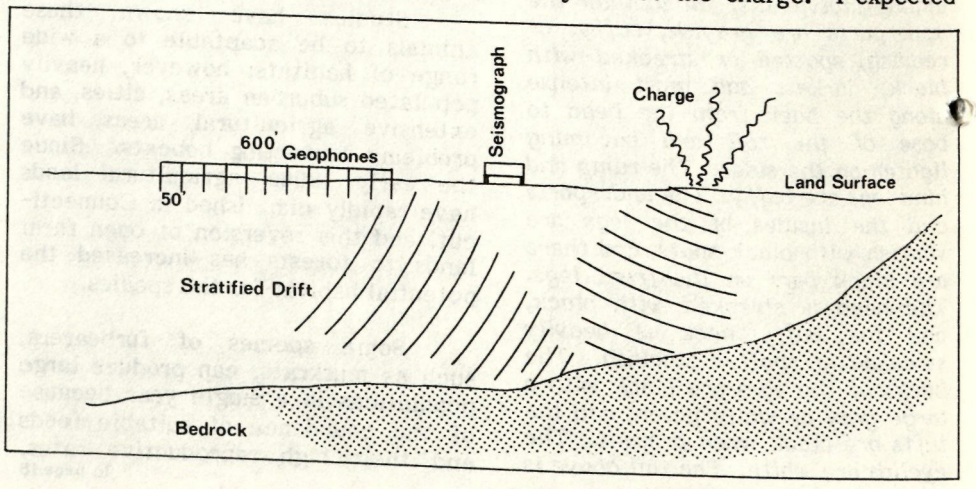
The Connecticut 208 Program has, therefore, entered into a cooperative agreement with the U.S. Geological Survey to collect data on several inferred aquifers to determine both their areal extent and whether or not they are saturated. The technique to be utilized for this effort is called "seismic profiling." This writer recently joined the U.S. Geological Survey field crew for a first-hand look at how this work is performed.

Pete Haeni, a geologist with the U.S. Geological Survey, and Phil Duran and Jeff Walker, U.S.G.S. hydrologic field assistants, were already at work in Haddam when I caught up with them. While Duran and Walker rigged up the seismic equipment, Haeni explained what the operation would encompass.

First, a six hundred foot cable is laid across the area to be profiled. A geophone, which is a small, sensitive probe designed to pick up vibrations, is placed every fifty feet along the cable. The geophones transmit all vibrations via the cable to a seismograph which can be located at either end. Once the cable and probes are set, a hole is augered a set distance from the end of the cable. An explosive charge equal to two or three sticks of dynamite is set in the hole. After personnel move to a safe distance, the seismograph is turned on, the charge is fired, and a graph is produced which records the time (in milli-seconds) taken for each probe to detect the explosion.

By analyzing the recording, the geologist is able to determine the depth to bedrock and the geometry of the underlying formation. In the case of stratified drift, the geologist can also determine whether or not the formation is saturated. The procedure is performed twice each time the cable is laid, because a charge must be set off on each end to determine the aquifer's profile.

By the time Haeni had finished explaining the procedure, his assistants indicated that they were ready to set the charge. I expected



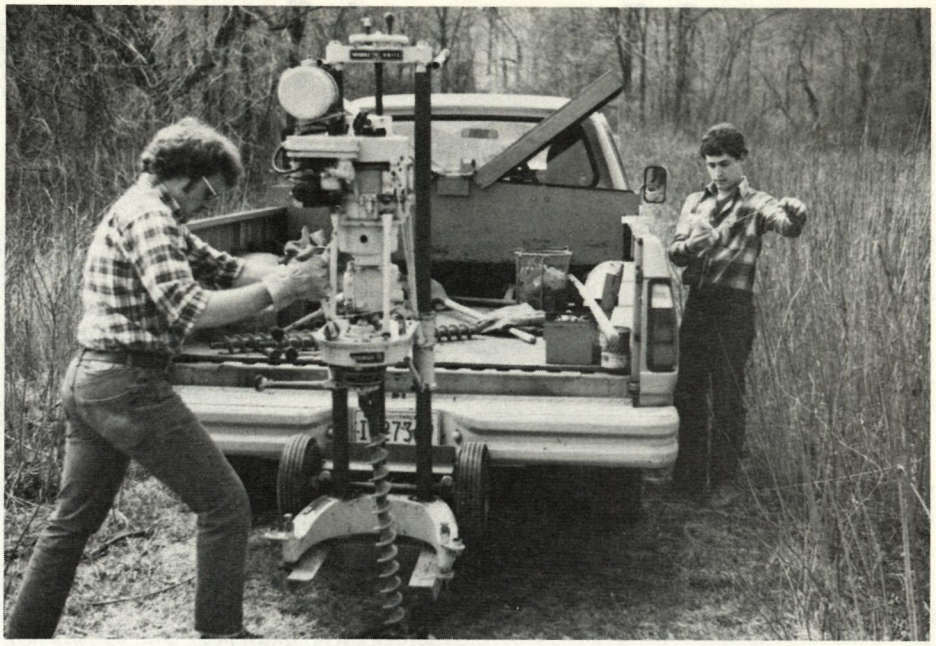
to see the familiar, dull, waxed paper tube that means dynamite. Instead, Duran was busy mixing two components in a plastic tube that was rapidly changing color from white to pink. Haeni explained that the component system was much safer than conventional dynamite. Because no explosive potential exists until the components are mixed, they can be easily transported and even carried in the same vehicle that carries the detonators, an absolutely taboo procedure when dynamite is involved.

Walker and Duran taped three of the tubes together with a blasting cap. The charge was then tamped into the hole and the immediate vicinity evacuated. When everything was ready the seismograph was turned on and the charge was fired. True to form, the machine produced its recording of the seismic vibrations. The resulting data will eventually be fed into a computer modelling program developed by the U.S.G.S. to assist in groundwater research.

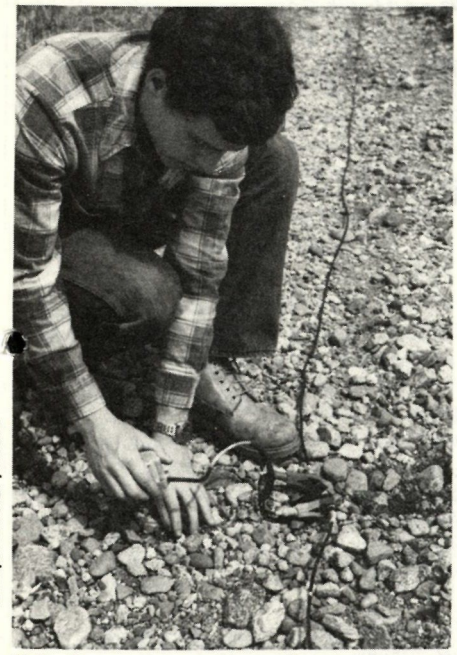
Haeni explained that about a half mile of aquifer can be profiled in a day using the seismic refraction procedure. This is much more efficient than the older method of drilling test wells. While seismic profiling has been used for oil exploration for the last 50 years, it has only recently been used for water resources work in the United States.

Many old-timers within the Survey who have utilized the tried and true procedure of drilling test wells are still somewhat reluctant to utilize the seismic profiling technique. Therefore, as a regular part of his job, Haeni travels to different regions of the country to demonstrate the procedure. The equipment that is now being used in Connecticut is worth roughly $20,000. While this may seem expensive, it is actually much cheaper than the aforementioned drilling.

In Connecticut, the U.S. Geological Survey has been using this procedure since the early 1970s. We are indeed fortunate to have such equipment at our disposal. Without the efforts of the Connecticut 208 Program and the U.S. Geological Survey, valuable groundwater supplies might go unprotected and be contaminated and rendered unfit. If that were allowed to happen, all of us would be the poorer.



Above, Jeff Walker, left, augers the six- to nine-foot deep hole for the explosive charge while Phil Duran prepares explosives. Below, Walker, left, and Pete Haeni tape a detonator into an explosive charge.



Joseph Rinaldi photos

Phil Duran sets one of twelve geophones used for the seismic profiling.

By Joseph M. Rinaldi,
208 Public Participation Coordinator,
P.O. Box 1088, Middletown, Ct. 06457

Nature Notes

by Penni Sharp

Spot a Warbler in Its Spring Colors

To residents of Connecticut, the month of May brings with it the assurance that spring is truly here. The landscape is fresh and green, and a welcome warmth is here to stay. Woodland wildflowers make their appearance and capitalize on the sunlight that filters to the forest floor. Insects, some more welcomed by the human population than others, reappear.

Timed with the emergence of insects, and thus an increased food supply, the spring bird migration is at its peak. This time of year is anticipated with fervor by most birders because the wood warblers will be heading north and will be brightly decked in the vibrant colors of their breeding plumage.

The wood warblers, family Parulidae, number approximately 120 species. About 35 to 40 of these pass through Connecticut during migration; some of them remain here to breed.

The family Parulidae is a New World family, and the common name, "wood warbler," is something of a misnomer as this family bears no relationship to the Old World warbler family, Sylviidae. In addition, they cannot be said to warble and generally have rather thin, weak voices.

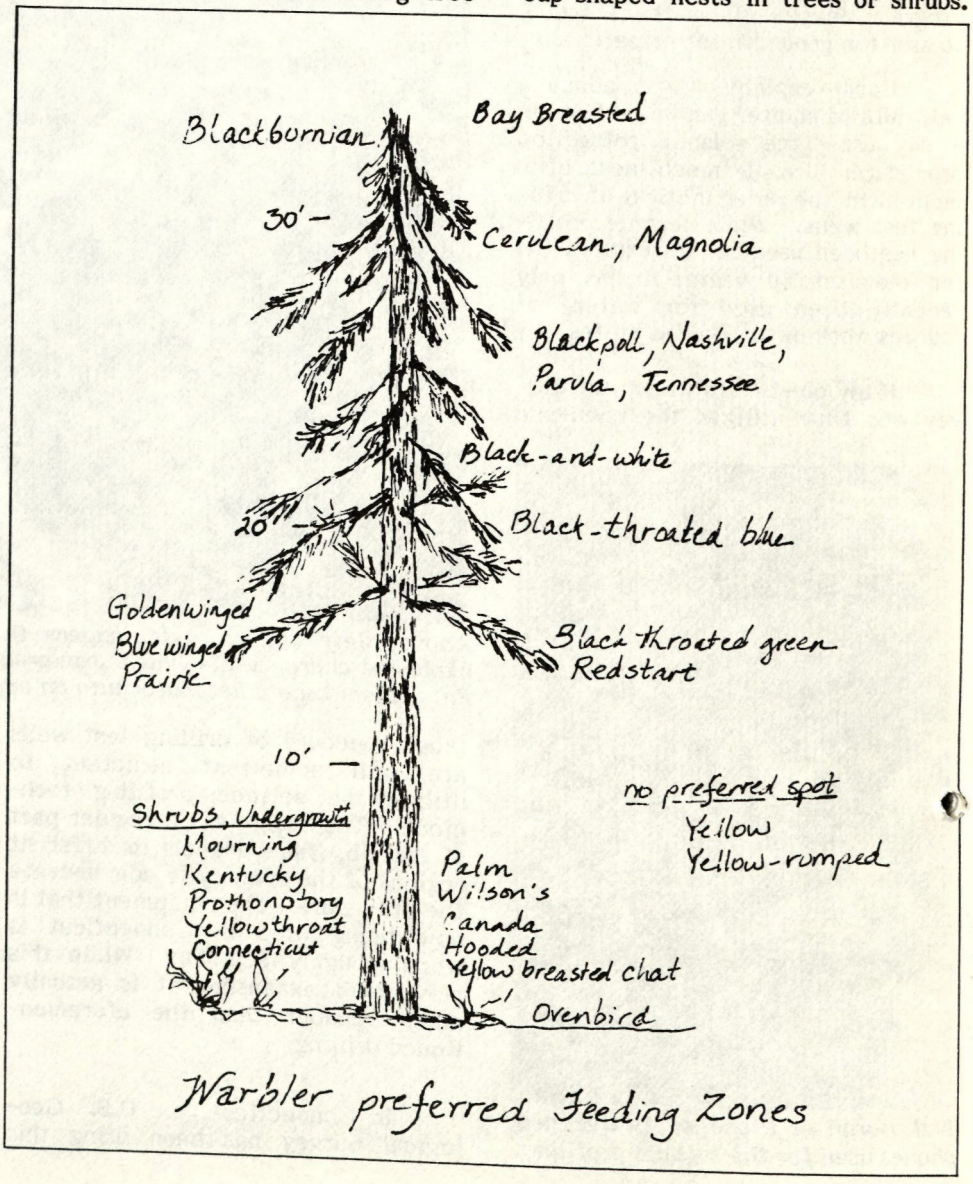
Wood warblers are small birds, averaging about five inches, with slender, pointed bills. They feed primarily on insects, although some will supplement their diets with berries and seeds. Warblers capture their insect food in many different ways. Some are gleaners, taking insects from the backs of leaves or bark crevices. Others flit from branch to branch gathering insects as they move. A few species of warblers take insects on the wing. Warblers migrate by night, and during the migration season they spend their days in the woods, moving from tree to tree. They are active birds and seem to feed constantly.

The location of activity can be diagnostic when one is attempting to identify a warbler as it darts among leaves and branches. Most of the wood warblers have preferred feeding zones. For example, the Blackburnian, Bay breasted, and Cape May warblers feed and move among tree tops. In the mid-zone of the canopy trees, the Tennessee, black and white, and black-throated blue warblers can be found. The Kentucky warbler, Palm, and yellowthroat can be spotted among shrubs and undergrowth.

Because of this zonation, many warbler species can happily coexist in a single tree, each finding its own special niche. As many as five to six species can thus exploit what appears to be a single food source.

Wood warblers are found in a wide range of habitats. Some travel to the coniferous forests of northern Maine and Canada to breed and raise their young. Others prefer deciduous woods such as those of Connecticut. Many warblers remain in the tropics and inhabit epiphyte-laden forests.

Wood warblers generally build cup-shaped nests in trees or shrubs.



They lay from two to six eggs which are white, speckled with brown. Nest building and incubation are performed by the female. However, both parents care for the young.

These fast moving, brightly colored birds are a delight to the spring bird watcher, but they can cause grief to that same enthusiast in the fall. By then, the bright feathers have molted and have been replaced, in many cases, by a dull olive-green plumage. The birds are no longer easy to distinguish, and it takes an expert eye to make positive identification. The term "confusing fall warblers" has made its way into bird field guides for good reason!

If you join the ranks of those who delight in spring warbler watching, you are almost certain to be rewarded. Some of the species commonly sighted in Connecticut are described below.

Yellow warbler

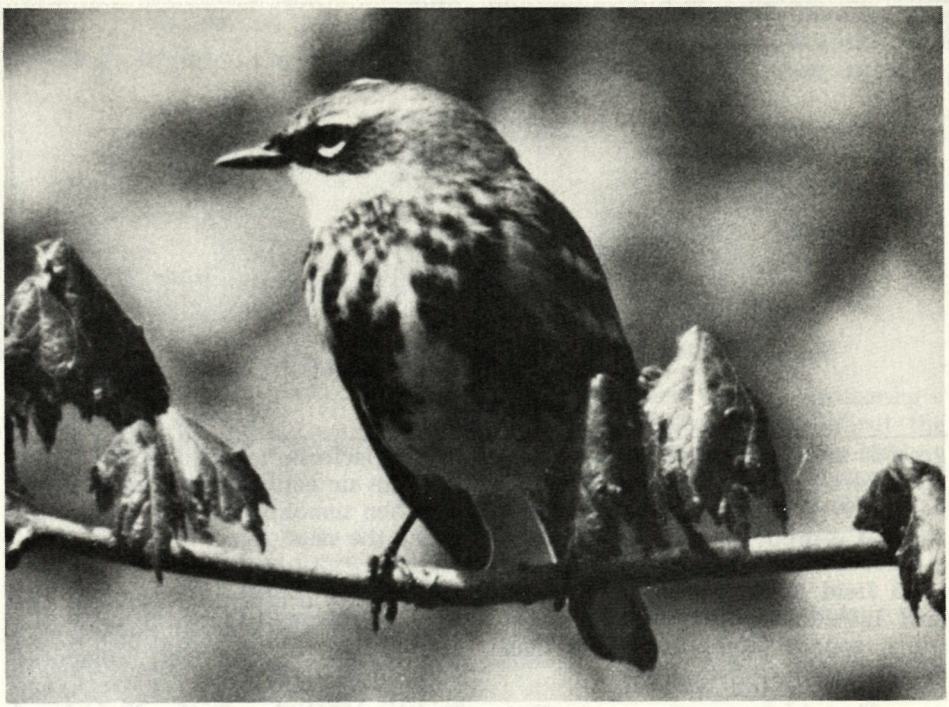
The yellow warbler (Dendroica petechia) is just that -- a bright yellow bird with a slightly olive-tinged back. The male has fine chestnut streaks on the breast. Yellow warblers prefer moist sites and can be looked for along streams and in marshes.

The nest of the yellow warbler is a woven cup made of bark, plant fibers, and down. The female lays four to five eggs. Cowbirds have been known to lay eggs in the nest of the yellow warbler. Often, the female warbler will build a new nest layer over the unwanted egg. Nests have been found with several layers, each containing a cowbird egg!

Yellow-rumped warbler

In most cases, the warblers are aptly named, and the yellow-rumped (Dendroica coronata) is no exception. Its yellow rump, patches of yellow on the sides and head, and white wing bars are good field marks for this bird. The spring male is a bluish-gray above with a white breast streaked with black. Females are a streaked gray-brown, and both birds have the yellow patches.

Yellow-rumped warblers breed in coniferous or mixed forest stands. The nest is constructed with twigs and rootlets and lined with grass and feathers. It is placed in an evergreen tree.



Leonard Lee Rue III – yellow rumped warbler

During migration, yellow-rumped warblers are abundant. This species is also the only warbler that commonly winters over in the northeast. During winter, yellow-rumps can be found where there is a plentiful supply of bayberries, red cedar, and poison ivy berries.

Black-and-white warbler

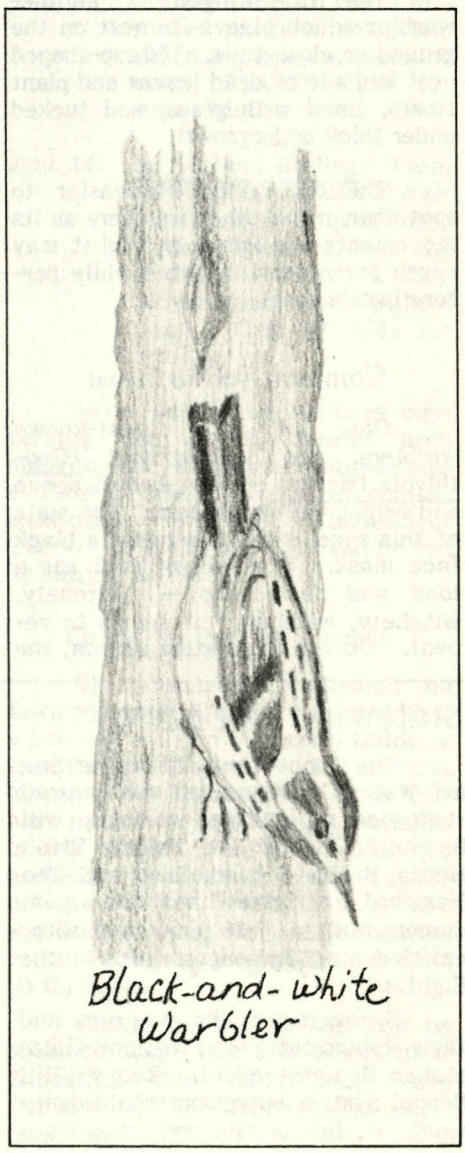
The black-and-white warbler (Mniotilta varia) is one of the first warblers to arrive in the spring. Black-and-whites are handsome striped birds, the male displaying a black throat while the female has white underparts.

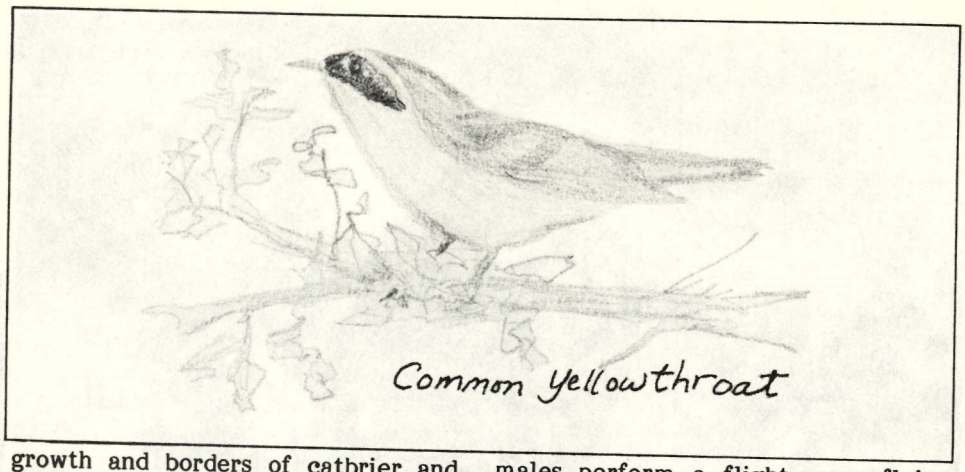
They breed in second growth deciduous woods. The nest is placed on the ground against the base of a tree or rock. The nest itself is built with rootlets, leaves, and grasses and is lined with hair and fern down.

The black-and-white warbler moves up and down tree trunks and branches searching for food. In its movements, it resembles the nuthatch and the brown creeper.

Blue-winged warbler

The blue-winged warbler (Vermivora pinus) inhabits abandoned fields or clearings with sapling





growth and borders of catbrier and multiflora rose. It is a handsome bird with gray-blue wings and white wing bars. It is predominantly yellow, with a narrow black eye-stripe which is a good field mark. The song of this bird is a distinctive "beeee bzzz" which sounds more insect-like than avian.

The blue-winged is another warbler which places its nest on the ground or close to it. The cup-shaped nest is made of dead leaves and plant fibers, lined with grass, and tucked under thick undergrowth.

The blue-winged is easier to spot than many other warblers as its movements are leisurely, and it may perch for several minutes while performing its song.

Common yellowthroat

One of the best-known warblers, the yellowthroat (Geothlypis trichas) is olive-brown above and bright yellow beneath. The male of this species has a handsome black face mask. The yellowthroat has a loud and fast song — "witchety, witchety, witchety," it seems to repeat. During the mating season, the males perform a flight song, flying into the air emitting a series of notes and then tumbling down to the ground giving the usual song.

The preferred habitat of yellowthroats is a moist thicket with low shrubs. The nest, composed loosely of grass, bark, rootlets, and hair, is located near the ground and concealed in a clump of grasses or weeds.

To add to the enjoyment of warbler watching, learn some of their songs. This can be of great help when trying to spot a small bright yellow object flitting among green leaves.

Suggested aids:

Peterson:	A field guide to bird songs of Eastern and Central North America - cassettes
Peterson:	A field guide to the birds
Robbins et al:	Birds of North America
Proctor:	25 Birding areas in Connecticut

■

Statewide Workshop

The Connecticut Council on Soil and Water Conservation's sixth annual statewide supervisors' workshop will be held June 12 at Valle's Steak House, Brainard Road, Hartford. The Hartford District will host the 6 p.m. dinner and a 7:15 p.m. workshop, entitled "Challenges for the Eighties."

Speakers on the program and their topics are: Dr. William Goldstein, Superintendent, Rocky Hill School System (environmental education); C. James Gibbons, Associate Community Resource Development Agent, Cooperative Extension Service (land preservation); Charles R. Frink, vice-director, Connecticut Agriculture Experiment Station (208/water quality); and Richard N. Symonds Jr., Assistant Director, Comprehensive Planning, State Office of Policy and Management (natural resources in Connecticut).

Reservations for the dinner/workshop must be made by June 1 with the Hartford County Soil and Water Conservation District, 340 Broad Street, Windsor, CT 06095. Cost is $10. ■

Bobcat Population Increases Gradually

From page 13

These furbearers are usually vegetarians (plant eaters) or omnivorous (eaters of both plants and animals). Muskrats, for an example, may have up to three litters a year of four to eight young. Species of furbearers like the bobcat, however, do not have large population increases in a single year because of limited food supplies, limited habitat, and low reproductive rates. Bobcats, as a rule, produce one litter a year of one to four young.

Bobcats in Connecticut were considered nuisance animals or varmints for many years. In 1935, a law authorizing towns to pay a $5 bounty for wildcats was instituted, encouraging the killing of bobcats. The law was implemented because of general public opinion categorizing the cats as potentially dangerous to livestock and poultry. The State Legislature repealed the bounty law in 1971. From 1971 to 1973, the DEP provided for a limited harvest season on bobcats to insure suitable population levels. In 1974, the Commissioner of the Department of Environmental Protection adopted a closed season regulation on the harvest of bobcats until sufficient data could be collected to estimate the population size.

Based on an increased number of bobcat sightings reported to the Wildlife Unit, I feel the bobcat population in Connecticut has increased over the past several years. Data is needed to determine the population age structure, reproductive rates, and disease vectors within the population. The most feasible method for obtaining this information is sampling the population through a strictly controlled limited harvest. This would provide Wildlife Unit staff with data to manage the bobcat population effectively.

The Wildlife Unit encourages reports of bobcats sighted in Connecticut. Report on the following form and mail it to: The Department of Environmental Protection, Wildlife Unit, Room 252, State Office Building, Hartford, CT 06115. Postage-paid, self-addressed postcards are available from the Wildlife Unit for these reports. ■

By Martina Delaney,
Citizens' Participation Coordinator

For Your Information

Waste Management Plan Now Available

Approximately 80 to 90 percent of all solid waste generated in the United States is disposed of in landfills. Connecticut generates over 6,000 tons of mixed municipal waste per day or over four pounds per day per person. Virtually all of this waste is disposed of in 172 public and private landfill sites. Over 50 Connecticut communities now dispose of their solid waste outside their municipal boundaries.

Only an estimated 2.4 million tons of uncommitted capacity remains in existing DEP-permitted landfills. This means that for over 5.6 million tons of solid waste that will be generated in Connecticut in the next four years there is no available "tipping" area.

Responsibility for solid waste disposal in Connecticut rests primarily with each municipality (C.G.S. 19-524n). However, landfill disposal areas and operating practices are regulated at both the State and federal levels. Federal regulation exists under the Resource Conservation and Recovery Act of 1976 (RCRA). State regulation of solid waste planning, facility permit review, and enforcement exists under Chapter 361a of the Connecticut General Statutes. In addition the Connecticut Solid Waste Management Services Act (C.G.S. 19-542p—19-524nn) establishes the Connecticut Resources Recovery Authority (CRRA) to assist municipalities seeking regional alternatives to landfill disposal.

Under State law every municipality must make provisions for the safe and sanitary disposal of the solid waste generated within its borders. A municipality may operate its own facility, or it may contract with a private corporation, another municipality, or the quasi-public CRRA. The Department of Environmental Protection (DEP) is statutorily required to regulate the chosen method of waste disposal through permitting and enforcement.

The Department of Environmental Protection also has responsibility for implementing a State Plan for solid waste management. In 1973 a State Plan for managing solid waste disposal was prepared by General Electric Company. Under RCRA the Solid Waste Management Unit of the DEP is required to revise the GE Plan and to bring it into compliance with EPA's regulations. A rough draft of Connecticut's latest State Plan became available on April 1 for review by interested persons.

This plan, when finalized, will propose facilities and systems which will allow individual municipalities to fulfill their obligation to provide waste disposal in the most cost-effective manner possible consistent with protection of the environment and which will provide reasonably long service life. This planning is most economically done on a statewide basis because of the geographic size and population density of Connecticut.

The projected time table for promulgating the State Plan is as follows:

April 1: Rough draft available for comment.

August 1: A revised draft of the State Plan available and public hearings begin.

Fall 1980: State Plan adopted either by the Governor and/or Legislators.

February 1981: Plan submitted to EPA.

Sierra Club Celebrates Coast

The Sierra Club is sponsoring a number of activities throughout the coming months to recognize 1980 as the "Year of the Coast." Background information on the Year of the Coast is available in the January 1980 Citizens' Bulletin CAM column.

Upcoming events include:

June 8: Barn Island Canoe Trip. Explore the estuaries and bay area of Barn Island in a canoe; beach combing and marsh exploration included too. Call 527-9788 for more details.

June 14: Barn Island Birding. Team up with a group of naturalists from the Pequot Sepos Nature Center to see one of the best preserves along the Southern New England Coast. Call 887-0381 for details.

More details on lectures concerning the coast, coastal area management, and barrier islands plus a Year of the Coast poster contest sponsored by the Connecticut Chapter of the Sierra Club can be had by calling 527-9788.

Guide to Permit Process

The Connecticut Council on Environmental Quality has published a booklet entitled "Citizen's Guide to the Permit Process." The booklet discusses the various DEP units that have permit responsibilities. Included in the "Guide" is information on the procedure involved in a permit application. It also contains a section which describes the public hearing process which many applications must go through.

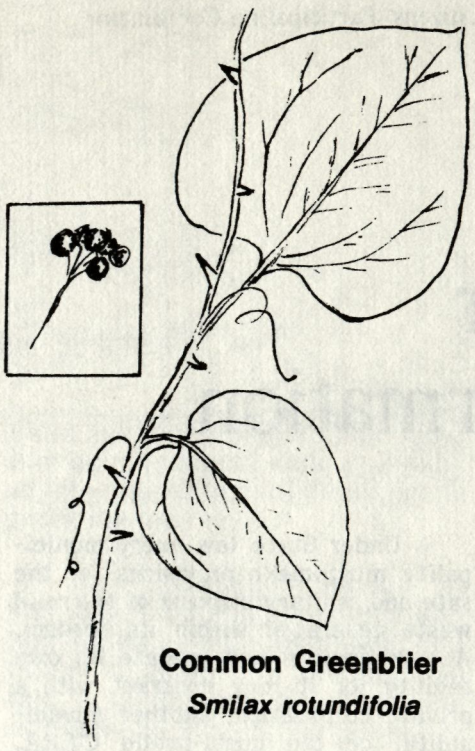
Copies of the "Guide" can be obtained from DEP's Information & Education Unit, Rm. 112, State Office Bldg., 165 Capitol Ave., Hartford, CT 06115. ■

Trailside Botanizing

by G. Winston Carter

This is not an easy plant to overlook, particularly if one comes in contact with some of its sharp prickles. However, the various particulars of its structure, its different uses, and its natural role in nature are characteristics of which many are unaware.

It is often found in rich lowlands or along the borders of woodlands in jungle-like form. There are approximately a dozen species of Smilax in the northeastern United States. This is one of the very common species. The generic name Smilax comes from the Greek work "smile" meaning "rasping." This refers to the sharp prickles which seem to reach out and grab you. The species name comes from the Latin for "round-leaved," which describes the heart-shaped leaves of this plant.



Common Greenbrier

Smilax rotundifolia

The common name "greenbrier" refers to the green leaves and prickly stem. It is sometimes called "catbrier" because its powerful recurved prickles suggest the claws of a cat. The plant is a vine with hollow green stems equipped with tendrils. The broadly rounded, parallel-veined leaves are green on both sides.

Common greenbrier is edible in a variety of ways. A flour can be made from the rootstock as well as a cooling drink or tasty jelly from the pulverized, strained sediment. The tender young shoots (up to five inches) can be cut up for a salad or can be cooked as a vegetable. Wildlife also benefit from this plant. Rabbits use it for cover, and the ruffed grouse, mockingbird, and catbird feed on the berries.

DEP Citizens' Bulletin

State of Connecticut
Department of Environmental Protection
State Office Building
Hartford, Connecticut 06115

SECOND CLASS POSTAGE PAID
AT HARTFORD, CONNECTICUT